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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/734,359	12/12/2003	Gerald W. Renken	1110-0470.01	3528
7590 07/28/2005			EXAMINER	
Joel H. Bock			DEB, ANJAN K	
Cook, Alex, McFarron, Manzo,			ART UNIT	
Cummings & Mehler, Ltd.			PAPER NUMBER	
200 West Adams Street - Suite 2850			2858	
Chicago, IL 60606			DATE MAILED: 07/28/2005	

Please find below and/or attached an Office communication concerning this application or proceeding.

Supplemental

Notice of Allowability

Application No.

10/734,359

Examiner

Anjan K. Deb

Applicant(s)

RENKEN, GERALD W.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 12/12/2003.
2. ☒ The allowed claim(s) is/are 1-3.
3. ☒ The drawings filed on 12 December 2003 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|---|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date <u>7/25/2005</u> . |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____ |

DETAILED ACTION

1. This office action is in response to application filed 12/12/2003 and interview summary filed 7/25/2005.

Examiner's Amendment

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

The application has been amended as follows:

In the specification, page 1, first sentence line 2, insert after "and" and before "U.S."

-- is continuation-in-part of --

In the specification, page 1, add at the end of first sentence -- now US Patent No.

6,847,213 B2 issued on January 25, 2005--.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Joel H. Bock on 7/25/2005.

Allowable Subject Matter

3. Claims 1-3 are allowed.

Reasons for Allowance

4. The following is an examiner's statement of reasons for allowance:

The primary reason for allowance of the claims is the inclusion of measuring the input impedance looking into the patch (conductor) at a reference plane at the end of patch cord for calculating patch length according to the relation $L_{\text{cord}} = (NVP * c) / (\Delta f * 2)$, where Δf is the frequency differences between maxima and minima of input impedance versus frequency, and NVP is the nominal velocity of wave propagation in the patch-cord, and c is free space velocity of light.

Pertinent Art

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Furse (US 20030222654 A1) discloses cable length determination system utilizing a standing wave reflectometer by measuring the frequency difference between the peaks, and the length (L) is determined according to the formula of $L = v/2 * \Delta f$, where v is the velocity of propagation of the conductor in air, and Δf is the frequency between the peaks. Furse does not teach measuring the input impedance looking into the patch (conductor) at a reference plane.

Renken et al. (US 6,847,213 B2) discloses hand-held tester for testing and calibrating patch-cords and mated connector pair in a LAN cabling system comprising means for sending

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and receiving a waveform of selected frequency through the patch cord, obtaining scattering parameters of patch cord and other connected components, obtaining frequency response and NVP (nominal velocity of propagation) values, and means for measuring phase. Renken et al. (US 6,847,213 B2) did not claim calculating patch-cord length L_{cord} by measuring the following parameters: phase, input impedance, frequency differences Δf between maxima and minima of input impedance versus frequency for calculating patch length according to the relation $L_{\text{cord}} = (NVP * c) / (\Delta f * 2)$.

Koeman et al. (US 5,821,760) discloses hand held apparatus for testing LAN cable including patch-cord. Koeman et al. does not disclose method of calculating patch length.

Bottman (US 5,570,029) discloses LAN cable testing method including patch-cord and determining cable fault distance (length) from instrument 10 (Fig. 2A, 2B) to the fault from the relation $L = 1/2 T_F * V$, where T_F is the elapsed time of signal, and V is the propagation velocity. Bottman does not teach measuring the input impedance looking into the patch (conductor) at a reference plane.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

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Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Anjan K. Deb whose telephone number is 571-272-2228. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lefkowitz Edwards can be reached at 571-272-2180.



Anjan K. Deb

Patent Examiner

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7/25/05

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